

STRESS AND MILITARY WOMEN: THE RELATIONSHIP OF JOB AND LIFE EXPERIENCES TO MENSTRUAL DISTRESS

Linda Torsani Fatkin

U.S. Army Human Engineering Laboratory, Aberdeen Proving Ground, Maryland

Traditional approaches to menstrual cycle research have concentrated on a disease-model framework. Emphasis has been on identifying the menstrual cycle as the independent variable that causes the events under investigation, or explains their variance. Parlee (1981) described this fundamental assumption as a deeply ingrained tenet of the medical-psychiatric approach. The context in which menstrual cycle variables, such as mood changes, occur is largely ignored, and their classification as normal or abnormal occurrences has appeared to be predetermined. Koeske (1981) emphasized that the behavior and moods of women are not ultimately and exclusively explainable as biological variable fluctuations, and that social and cognitive variables also need to be measured precisely.

There is a need for research detailing the contexts in which the menstrual cycle variables occur to provide the bases for a conceptual framework outlining areas of bio-social interaction. In accordance with this context-dependence framework, Sommer (1981) suggested as the selected sample for study, a high-risk group of women who might be more inclined towards experiencing menstrual distress because of their particular life history, life circumstance, or current situation.

The individual and circumstantial variables which influence the menstrual cycle are: (a) amount of situational stress, (b) age, (c) use of oral contraceptives and intrauterine devices (IUDs), (d) physical activity, (e) body composition, (f) subjective stress experience, and (g) femininity (e.g., Dan, Graham, & Beecher, 1980).

Two occupational groups were selected for the present study to represent traditional and nontraditional work environments that vary in degree of situational stress. It was predicted that women would report experiencing more menstrual distress if they: (a) worked in a nontraditional occupation; (b) experienced a high degree of occupational stress (defined by scores on the Job Related Strain Index, a greater proportion of men within their duty section, less job experience, or conflict between feminine values and job choice); (c) reported a high degree of life stress; and (d) reported a history of menstrual distress.

Method

Subjects

Subjects were 36 male and 25 female soldiers; 34 were military police (MP) and 27 were administrative specialists (ADMIN). Appropriate measures were taken to control for the following factors: (a) contraceptive use, (b) age range, and (c) percent body fat.

Materials

The General Background Questionnaire (GBQ) was devised for the present study and requested general background and job-related information.

The Life Experiences Survey (LES) was selected as a measurement of the stress of life changes. It is a 57-item self-report measure which allows subjects to rate separately the desirability and impact of events they have experienced during the past year (Sarason, Johnson, & Siegel, 1978).

The Inventory of Feminine Values (IFV) was used to measure attitudes toward the feminine role (Steinmann & Fox, 1979), and the Job Related Strain Index (JRS) was used as a measurement of job stress (Drew, 1982).

The occurrence of menstrual distress symptoms was measured by responses

on the Body Awareness Questionnaire (BAQ), modelled after the form used in the Wilcoxon, Schrader, and Sherif (1976) study. To avoid eliciting stereotypical responses, the specific intent of the study was not known to subjects and the BAQ instructions describe these items as experiences which men and women sometimes have. It allows subjects to describe the symptoms as they are experiencing them on the day the questionnaire is being answered, and is reported to have a high internal consistency and test-retest reliability (e.g., Koeske, 1981).

The Daily Events Rating Scale (DERS) is a short form attached to the BAQ. The form was devised for the present study to allow subjects in each occupation to assign a subjective stress rating to the events which occurred that day.

Procedure

The men and women attended orientation meetings in mixed groups of five, and direct reference to menstruation was avoided by referring to the study in the context of general health issues. Subjects who agreed to participate for 35 consecutive days signed the consent forms, and completed the four initial questionnaires: the GBQ, the LES, the JRS, and the IFV. They were then given an envelope containing the daily questionnaires (the BAQ and the DERS). Subjects were instructed to complete the daily questionnaires at the end of their work day and return the sealed envelope to a central (and convenient) location before leaving for work the following morning. They obtained the next envelope at the same location upon their return from duty each day.

Individual End-of-Study Interviews included specific questions which requested the subjects' comments about the study, their perception of the validity of their test scores, and other job-related questions. In addition to the standard questions, women were asked about the regularity of their cycles before entrance into military service, specifically any history of menstrual distress.

Results

Analysis

The predictor variables included in the multiple regression analysis were: (a) job stress (measured by the JRS), (b) feminine values (IFV), (c) life stress (LES, negative score), (d) subjective stress (Overall DERS score), (e) job, (f) job experience, and (g) history of menstrual distress. The outcome variable was the menstrual distress score, which was derived from the mean score of the daily BAQ's. All significance levels for F ratios were set at $p < .05$.

Traditional vs. nontraditional occupations. Women working in the nontraditional occupation of Military Police (MP) reported significantly more menstrual distress than women working in the traditional administrative positions (ADMIN).

Correlation matrix. A significant relationship was found between life stress scores and menstrual distress scores ($r = -.5619$). Those who experienced more negative life stress, also reported more menstrual distress.

There was a significant correlation between job and reports of menstrual distress ($r = -.4295$). Women in the nontraditional job (MP's) were more likely to report distress than those who worked in the traditional occupation.

Level of job experience and reports of menstrual distress were also significantly correlated ($r = -.4762$). Women who were in the lower job experience level (7 months or less) reported more menstrual distress than those with more job experience (8 months or more).

Job stress and job experience level were correlated in a similar manner ($r = -.4384$). Women in the lower experience level reported more job stress

than women who had worked in their jobs for longer periods of time.

Type of job and level of experience were also correlated ($r=.5192$). Thus, when dividing the women according to job and experience level, the MP's working at low levels of experience outnumbered the Admin women. The reverse was true for the higher experience level.

Regression analyses. In order to select the minimum number of variables necessary to account for the maximum amount of variance in the total set, a forward regression solution was used. Life stress (accounting for 32% of the variance), job experience, subjective stress, job, feminine values, and job stress were the six predictors that accounted for a significant amount of the variance on menstrual distress. A multiple regression analysis was then performed on these dominant predictors, yielding a multiple R of 0.6956, $F(6,18) = 2.81$, $p<.05$.

Post-hoc Comparisons

Sex differences. Males were included as a comparison sample because their behavior has been the implicit standard against which feminine fluctuations have been compared. The outcome variable is discussed as "health distress" because the term "menstrual distress" is applicable only to females.

MP females reported the highest amount of health distress and job stress. However, the life stress reports seem to vary according to job rather than sex. The MP men and women rated their life experiences as more stressful than the ADMIN group.

Females gave their daily events higher (more positive) ratings than the males, as indicated by their subjective scores. Males had perceived a larger proportion of the 35-day rating period as being negative, which resulted in the lower mean scores.

Discussion

Methodological Issues

The present study incorporated many of the methodological improvements emphasized for menstrual cycle research by other investigators (e.g., Dan et al., 1980). A non-clinical population was used, along with an initial cover story that avoided direct reference to menstruation. These factors were used to avoid the problem of demand effect and volunteer bias. Questionnaires were collected on a daily basis to avoid reliance on retrospective measures of body symptoms and to prevent referrals to previous reports completed by the men and women. Undertaking the study of menstrual distress within a context-dependence framework, provided for the analysis of factors which have an affect on the degree of menstrual distress for a specific subgroup of our population, rather than assuming ubiquitous effects for all women.

Job and Menstrual Distress

The increased reports of menstrual distress in the MP women may be due to a greater sensitivity and awareness to environmental occurrences. Kanter (1977) emphasized that women in male-dominated jobs frequently share experiences--the organizational discomfort of being pioneers, the feelings of isolation, the lack of support from male colleagues, loneliness, and sexual discrimination. Although these experiences may not lead to a dissatisfaction with the actual duties on the job, women may instead be more attentive to these external pressures and to changes in their body states.

The changing shift routine was identified as a primary stressor for the MP women. The MP's in the present study worked under a three-day rotating shift work schedule consisting of three "day shifts" (0700-1500 hours), three "swing shifts" (1500-2300 hours), three "midnight shifts" (2300-0700 hours), and three days off. The scheduling of shift work profoundly affects

psychophysiological processes. Luce (1971) reported that rotating shifts put a person in a state of internal desynchrony; some individuals have shown an adjustment to night shift within 5 days, while others have not adjusted in 21 days. The psychological strains and physiological changes that can occur during rotating shift schedules could lead to an increased vulnerability for the MP's so that they become more susceptible to the experience of menstrual distress.

The MP males had similar reactions to the 3-day rotating schedules, including complaints about the repeated disturbances in their sleeping and eating patterns. This result was not surprising as Unger (1975) has reported that women are not alone in having biological cycles that are vulnerable to shift changes. An increasing number of biological parameters have been shown to vary in both sexes with time of day and over weeks and months.

Parlee (1981) emphasized that male performance is not irrelevant to the study of behavioral changes associated with the menstrual cycle because it is important to the study of "rhythmic changes in human behavior... a more useful concept in a general psychological theory". Research directed toward "human cycles" is not intended to deny the reality of the menstrual cycle or the various symptoms and changes in behavior associated with it, but serves to place the menstrual cycle in its proper perspective along with many other biological cycles that affect the lives of both males and females (Unger, 1975).

Menstrual Distress and Degree of Occupational Stress

Level of job experience was considered to be a contributing factor to the perception of the occupational stress and reports of menstrual distress. Individuals with less experience might experience uncertainty about control over job-related events; this uncertainty has significant effects on health (Suls & Mullen, 1981). Those individuals with more skills and broader experience act more confident and seem to cope adaptively with a current stressor (Rabkin & Struening, 1976).

In the present study, the assumption that a reciprocal relationship exists between amount of job experience and reports of menstrual distress and job stress is premature. Because of the significant correlation found between job and job experience, the possible effect of job experience on menstrual distress and on job stress scores is confounded by the influence of the unequal proportions of MP subjects and ADMIN subjects in each experience level. It is probable that the higher menstrual distress scores and job stress scores in the low experience group are related to the higher proportion of MP's in that group, and not the amount of job experience. This issue still needs to be investigated to determine if the larger proportion of MP's in the low experience group could be corrected through more stringent experimental control, or if the small amount of time-on-the-job is in fact a by-product of the job itself.

Life Stress and Menstrual Distress

While scores from the LES were found to be significantly correlated with the menstrual distress scores, other social-environmental factors must be acknowledged when assessing the relationship between the life stress scores and reports of menstrual distress. For example, subjects in the MP group have a life-style of rapid changes, requiring many adjustments and very little time to adjust effectively. They are expected to deal professionally with unexpected events; they are to maintain their authoritative image; they are to fulfill complex and varied duty assignments; and they must cope with the 3-day rotating shift-work schedule.

The inconsistency and lack of personal control in the MP's environmental

and occupational life-style may have the greatest impact upon the experience of menstrual distress. The implication that social-environmental factors are indeed significant contributors to menstrual distress for military policewomen should be explored further to test the generalizability of this theoretical issue. To what other nontraditional occupations can this effect be generalized?

A practical application of these research findings is that the identification of organizational stress factors that affect the emotional and physiological health of specific personnel subgroups may be facilitated. Effective organizational changes are made through a careful consideration of the employees' well-being as well as an assessment of organizational needs. These changes may not only prevent possible long-term deleterious effects on health, but may also promote the optimum utilization of male and female personnel.

References

- Dan, A.J., Graham, E.A., & Beecher, C.P. (Eds.). (1980). The menstrual cycle: A synthesis of interdisciplinary research (Vol. 1). New York: Springer.
- Drew, K.E. (1982). Menstrual symptoms and occupational strain in working women. Unpublished masters thesis, University of Illinois.
- Kanter, R.M. (1977). Some effects of proportions on group life: Skewed sex ratios and responses to token women. American Journal of Sociology, 82, 965-990.
- Koeske, R.D. (1981). Theoretical and conceptual complexities in the design and analysis of menstrual cycle research. In P. Kommenich, M. McSweeney, J.A. Noack, & N. Elder (Eds.), The menstrual cycle: Research and implications for women's health (Vol. 2). New York: Springer.
- Luce, G.G. (1971). Body time: Physiological rhythms and social stress. NY: Pantheon Books.
- Parlee, M.B. (1981). Gaps in behavioral research on the menstrual cycle. In P. Kommenich, M. McSweeney, J.A. Noack, & N. Elder (Eds.), The menstrual cycle: Research and implications for women's health (Vol. 2). New York: Springer.
- Rabkin, J.G., & Struening, E.L. (1976). Life events, stress, and illness. Science, 194, 1013-1020.
- Sarason, I.G., Johnson, J.H., & Siegel, J.M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. Journal of Consulting and Clinical Psychology, 46, 932-946.
- Sommer, B. (1981). Menstrual cycle research: Yesterday, today, and tomorrow. In P. Kommenich, M. McSweeney, J.A. Noack, & N. Elder (Eds.), The menstrual cycle: Research and implications for women's health (Vol. 2). New York: Springer.
- Steinmann, A.G., & Fox, D.J. (1979). Manual series for the interpretation of the Maferr Inventory of Feminine Values. New York: Maferr Foundation.
- Suls, J., & Mullen, B. (1981). Life events, perceived control and illness: The role of uncertainty. Journal of Human Stress, 7, 30-34.
- Unger, R.K. (1975). The case for human cycles. In R.K. Unger, & F.L. Denmark (Eds.), Woman: Dependent or Independent Variable? New York: Psychological Dimensions.
- Wilcoxon, L.A., Schrader, S.L., Sherif, C.W. (1976). Daily self-reports on activities, life events, moods, and somatic changes during the menstrual cycle. Psychosomatic Medicine, 38, 399-417.